

Claims

1. A low-pressure mercury lamp, comprising:

an arc tube whose at least one end is wound around an axis entirely in a longitudinal direction thereof; and

5 a holding member that holds the arc tube in a state where the at least one end is inserted in an opening formed in the holding member,

wherein the holding member includes an insertion-guiding unit for guiding the at least one end of the arc tube to be inserted into the opening while preventing positional deviation of the at least one end, when the arc tube is rotated around the axis to be attached to the holding member.

2. The low-pressure mercury lamp of Claim 1, wherein

15 the insertion-guiding unit is formed as a groove extending in a direction in which the end of the arc tube is wound around the axis.

3. The low-pressure mercury lamp of Claim 2, wherein

20 a part of the groove that comes in contact with a part of the end of the arc tube has a shape corresponding to a shape of the part of the end of the arc tube.

4. The low-pressure mercury lamp of Claim 1, wherein

25 the arc tube includes a pair of lead wires for an electrode extending from the end of the arc tube,

the opening opens toward a direction of the axis, and

the holding member allows the pair of lead wires to be inserted in the opening.

5 5. The low-pressure mercury lamp of Claim 4, wherein the opening is formed at an angle of 20 to 60° inclusive with respect to the axis.

10 6. The low-pressure mercury lamp of Claim 4, wherein the holding member includes a covering unit that is formed so that the opening is positioned at an edge of the covering unit, the covering unit covering the end of the arc tube, and the opening is partially formed by a notch created in the covering unit and/or the insertion-guiding unit.

15 7. The low-pressure mercury lamp of Claim 1, wherein the end of the arc tube is bonded within the holding member via a bonding agent.

20 8. The low-pressure mercury lamp of Claim 7, wherein the insertion-guiding unit includes one or more inlets for injecting the bonding agent in an area between (a) the end of the arc tube placed in the holding member and (b) the insertion-guiding unit of the holding member.

25 9. The low-pressure mercury lamp of Claim 7, wherein the holding member includes a wall at an internal surface thereof for preventing the bonding agent from flowing outside.

10. The low-pressure mercury lamp of Claim 1, wherein
the arc tube includes a pair of lead wires for an electrode
extending from the end of the arc tube, and

5 the holding member includes a supporting unit for
supporting the pair of lead wires while keeping a certain
distance between the lead wires.

11. The low-pressure mercury lamp of Claim 1, wherein
10 the arc tube includes a glass tube that is turned at a
substantially middle thereof and wound around the axis from
the middle, to have a double-spiral structure.

12. A method for assembling a low-pressure mercury lamp
15 including: an arc tube whose at least one end is wound around
an axis entirely in a longitudinal direction thereof; and a
holding member that includes an insertion-guiding unit for
guiding the at least one end of the arc tube to be inserted
into an opening formed in the holding member while preventing
20 positional deviation of the at least one end,

wherein a process of attaching the arc tube to the holding
member includes the steps of:

making the at least one end of the arc tube come in contact,
at a peripheral surface thereof, with the insertion-guiding
25 unit of the holding member; and

rotating, in a state where the at least one end of the
arc tube is in contact with the insertion-guiding unit, the

arc tube and/or the holding member around the axis, so that the arc tube has a relative position with respect to the opening of the holding member.

5 13. The method for assembling the low-pressure mercury lamp of Claim 12, wherein

 the arc tube has a pair of lead wires for an electrode extending from the end of the arc tube,

 the opening opens toward a direction of the axis, and

10 the step of making the at least one end of the arc tube come in contact with the insertion-guiding unit of the holding member is carried out in a state where the lead wires are parallel to the direction of the axis.